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**TRIPHIBIOUS CAMPAIGNING -- A DIFFERENT
PERSPECTIVE ON OPERATIONAL MANEUVER**

**A Monograph
by
Major Michael L. Parker
Armor**



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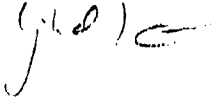
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The paper concludes that the concept of triphibious campaigning is theoretically sound. Bringing the concept from theory to today's reality is not so easy. Recommendations are made to address shortfalls in operational concepts, force structure, and amphibious shipping capabilities. (jld) 

Triphibious Campaigning
--A Different Perspective on Operational Maneuver

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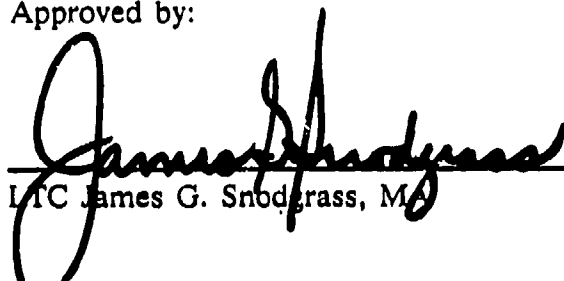
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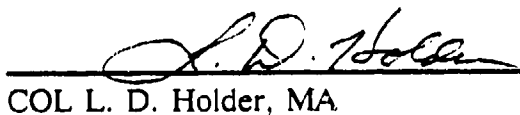
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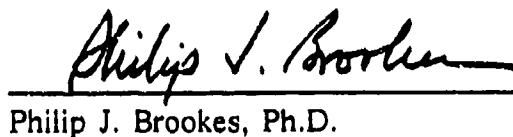
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ABSTRACT

Triphibious Campaigning

--A Different Perspective on Operational Maneuver

Major Michael L. Parker, USA, 47 pages.

Ground, water, and air methods of invasion add flexibility and strength to the United States' offensive capability. This monograph is designed to examine the current feasibility of large scale joint amphibious operations. It seeks to answer two questions. What is our capability for moving large ground combat units over water barriers to gain, retain, or re-establish a foothold on other continents? Are well-founded operational procedures in place for the conduct of large scale joint amphibious operations? At the operational level of war, a more appropriate term for describing large scale joint operations may be *triphibious*.

The monograph begins by defining the problem and offering a tentative definition of triphibious operations. It then explores the theoretical foundations of amphibious operations through a survey of Mahan and Jomini. William Lind's writings on maneuver warfare are used to link ideas from the past, present, and future. The joint amphibious operations of MacArthur in the Pacific theater during World War II and Korea's Inchon landings are used to bridge the gap between theoretical concepts and the reality of war.

The paper concludes that the concept of triphibious campaigning is theoretically sound. Bringing the concept from theory to today's reality is not so easy. Recommendations are made to address shortfalls in operational concepts, force structure, and amphibious shipping capabilities.



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I. THE PROBLEM

Introduction

The conventional assault triad formed by ground, water, and air methods of invasion adds flexibility and strength to the United States' offensive capability. Any one medium cannot be overlooked or allowed to atrophy. The apparent speed and flexibility of air operations seem to be a solution to overcoming the vastness of the sea. However, the vulnerability of airborne, airmobile, or air assault forces moving over long distances to the objective area presents operational planners with a high risk, low payoff situation. Furthermore, the relative combat strength of these units is typically far less than that needed for a full-scale invasion of a hostile continental shore.

This monograph is designed to examine the current feasibility of large scale joint amphibious operations. It seeks to answer two questions. What is our capability for moving large ground combat units over water barriers to gain, retain, or re-establish a foothold on other continents? Are well-founded operational procedures in place for the conduct of large scale joint amphibious operations?

Large scale joint amphibious operations stretch sea-air-land operational concepts to their maximum limits. For this reason, it is the ultimate vehicle for exploring the theoretical and practical limits of the operational level of war.

The JCS Pub. 1, *Dictionary of Military and Associated Terms*, defines an amphibious operation as, "an attack launched from the sea by naval and landing forces, embarked in ships or craft, involving a landing on a hostile shore." (1) Joint doctrine for

amphibious operations, FM 31-11, says that, "the salient requirement of the amphibious assault is the necessity of building up combat power ashore from an initial zero capability to full coordinated striking power as the attack drives toward the amphibious task force final objectives." (2)

It appears to me that this is a concept that only addresses getting to an enemy's tactical depth. At the operational level of war, I think a more appropriate term is triphibious operations. Triphibious is defined as, "employing, involving, or constituted by naval, land, and air forces and often including airborne troops in coordinated attack." (3)

Triphibious operations have as their goal penetration of the enemy's defenses to gain operational depth with all of its inherent advantages. The concept of triphibious campaigning is a logical evolution of traditional amphibious doctrine. Adding a "vertical" assault element allows the triphibious planner to plan operations that simultaneously strike at a greater depth of enemy defenses from a greater distance off shore. Stretched to its limit, this is an all-service, coordinated operation that extends in three dimensions. The area which comprises the theater of operations reaches from over the horizon to the operational depth of the defender.

I am not satisfied that the current studies or doctrine on amphibious operations look much past the tactical realm. The scope of operations in this type of theater has expanded significantly based on the lethality and range of modern weapons, as well as the ability of a land based commander to observe vast stretches of the sea out to the horizon. The triphibious concept

is also much larger than just assault landings. It spans the entire range from the movement and launching of assault forces from over the horizon to the handover of battle to heavy conventional combat forces.

One of the most difficult problems posed by this type of operation is synchronizing air, sea, and land operations as well as making the transition from Naval warfare to AirLand Battle. Linked to this is the problem of determining the correct command relationships. William S. Lind, in his *Maneuver Warfare Handbook*, examines the challenge of commanding and controlling this type of operation and proposes a simple solution.

"Both naval and ground force commanders must understand the operational goal and be prepared to sacrifice short term tactical goals to achieve it. Whether the amphibious task force or landing force commander controls the elements of an amphibious landing should be wholly dependent upon whatever considerations, be they naval or ground, are critical to achieving the operational goal." (4)

The command and control of forces is as important in the initial assault as it is in the battle handover between ground forces, as the battle changes character from being an amphibious assault to being a large scale offensive operation involving heavy forces.

Purpose and Scope of the Study

This study seeks to examine the problem with a view toward all four of the services. The service least prepared for this style of operational maneuver is the Army and, within the Army, her heavy forces and their organic combat service support units.

Mr. Lind contends that

"modern weaponry has raised serious questions about the potential costs of amphibious landings." He continues by saying that "the problem of getting forces ashore becomes even more difficult when the presence of mechanized, highly mobile enemy ground forces must be taken into account. Many

of the basic conditions for a traditional amphibious assault may no longer be attainable." (5)

The experiences of World War II and Korea have reinforced the need for joint amphibious operations. By the end of 1950, our joint doctrine in this area had been honed to a fine edge as a result of lessons learned from over 61 large scale amphibious operations and campaigns. The majority of these were joint operations where the preponderance of land forces was Army. More recently, we have thought about, and to a lesser degree demonstrated, the ability to conduct operational maneuver in the air, on the ground, and on the sea. What has not been done is anything that links operational maneuver in all three environs.

The amphibious assault is an operation that is a link between the operational maneuvers of the sea, land, and air. It provides the greatest capability for forceable entry that is now available to us. "Forceable entry" is defined as establishing a military presence in an area defended by an enemy with direct fire weapons. The concept of triphibious operations hinges not only on the success of integrating all arms, but integrating all services as well. Based on my own thoughts and Marine Corps' tactical concepts, phases of an operation of this nature--elements of a triphibious campaign--may be categorized as follows:

- * Movement to the area of operations, generally some position over the horizon.
- * Preparatory fires on the assault beachhead and in depth by both naval and air forces.
- * Ship-to-shore movement.
- * Assault of the beachhead objective area, deep flanks, and the forward edge of the planned lodgment.

- * Link-up of forces and expansion of the lodgment area.
- * Heavy forces movement to the objective area.
- * Debarkation and forward passage of heavy forces.
- * Battle handover.
- * Extraction of amphibious assault forces.

In explaining why this is important, let me present two hypothetical situations that reinforce the theater commander's need to conduct amphibious operational maneuver:

U.S. forces, having been driven from the European continent and the United Kingdom in a central European war scenario, must mount a joint invasion to re-establish a foothold on the continent, regain the initiative, and carry the war to the enemy.

In order to protect vital interests in Japan, U.S. forces must mount a joint invasion from the east to establish a strong presence in eastern Asia.

It had originally been my intent to examine current joint amphibious doctrine as it applies to the operational level of war. As written, current joint amphibious operations/campaign doctrine appears to be nothing more than tactical amphibious doctrine writ large. What I think that it should be is the link between AirLand battle and Naval warfare.

The future of overseas basing is another consideration in examining alternatives to current strategies. The United States is having to look at new strategies since,

"most nations do not seem interested in expanding or introducing visible US military presence on their territory, and there are now a number of nations that indicate publicly that they wish to reduce the number of US bases." (6)

With the current trend toward a united Europe, we may even find that the European continent no longer serves as a forward

staging area by the end of this century. In a "bolt from the blue" Soviet invasion scenario, my hypothetical situation requiring an assault to introduce forces onto the continent may become a reality. The Army has the highest probability of employment in a large scale forceable entry and is probably the least prepared. Albert Garland, in his article "Amphibious Warfare: Where Does the Army Stand?", examines the capability of Army units to conduct amphibious operations. I think that he quite accurately pinpoints major concerns for future planners.

"If the United States decides to commit sizable numbers of ground units to any particular geographic region for an extended period of time, and particularly if an assault landing on the hostile shore must be made beforehand, the Army is going to have to use its infantry and armored battalions in large numbers. This is simply because the Army's airborne division and the Marine Corps units now in being are neither equipped nor trained to carry out amphibious assaults followed by extensive land operations."(7)

"For the moment, though, the Army is in no condition to conduct any kind of amphibious operation, particularly one in which it may have to force its way ashore. It has neither the specially trained combat units nor the special support units to do the job."(8)

Current United States strategy hinges on our ability to present a credible deterrent to aggression by stationing forces in strategic locations before the outbreak of hostilities. As bases are closed to us, we must look at new ways to deploy credible, large scale forces into a potentially hostile theater. This study seeks to explore the feasibility of triphibious campaigning in response to the loss of forward basing rights.

Outline of the Study

This study considers its subject in five sections. Section II explores the theoretical foundations of amphibious operations.

Corbett, Mahan, and Jomini provide a theoretical frame of reference. MacArthur's operations in the Pacific and the writings of Liddell Hart help bridge the gap between theory and practice at the operational level of war. On a more contemporary note, William Lind's writings on maneuver warfare are used to link past, present, and future thinking on operational amphibious maneuver. All of these combine to set the stage for the further investigation of joint amphibious operations and campaigns.

Section III explores the evolution of U.S. joint amphibious doctrine and procedures since their birth in 1934 to the present day. Changes in force structure and the impact of advances in both friendly and enemy procedures and technology are some of the forces that have helped drive this evolution.

Section IV takes a closer look at the practical application of large scale joint amphibious doctrine. The joint amphibious operations of MacArthur in the Pacific theater during World War II and Korea's Inchon landings are the best examples available for study. These practical examples are used to bridge the gap between theoretical concepts and the reality of war.

The final section offers some conclusions and recommendations based on the material presented in previous sections. It addresses future feasibility and requirements. It looks at the current doctrine from a more practical point of view. To do this I assess the feasibility of amphibious doctrine based on its relationship to theory and to the technological means available. Suggestions for doctrinal improvements and technological developments explored.

II. THEORETICAL BASIS FOR TRIPHIBIOUS OPERATIONS

Introduction

B.H. Liddell Hart in an article titled, "New Warfare--New Tactics", says that,

"the aim of new tactics must be to paralyze the enemy's action. . . we want a new principle of 'offensive fluidity of force'-- to operate like the sea or swarm of bees, not like a battering ram. . . a swarm of bees does not concentrate-- they attack you from all directions simultaneously." (1)

This statement embodies the very soul of AirLand Battle doctrine. The synergistic effect of multiple arms, acting simultaneously against an enemy brings the conventional military machine to its peak efficiency. I am going to take this concept, apply it to the prosecution of a campaign whose operations commence at some point over the horizon and conclude at some point far inland from the distant hostile shore. How does it work? What are the preconditions for success? Is something of this scope and magnitude really feasible today? Theory gives us a frame of reference within which to conduct the analysis.

The role of military theory is to provide a structured body of knowledge that proposes principles which attempt to explain the dynamics of warfare. Both Clausewitz and Jomini offer only brief insights on triphibious operations.

It is difficult to find precise references to landing operations in *On War*. Interpreters of Clausewitz argue that his theories may be logically extended to examine a theater that spans the terrestrial, aerial, and aquatic environs.

Clausewitz's military vision was, in reality, landlocked which is a reflection of his continental war experience. The

closest that he comes to suggesting amphibious operations is a reference to landing troops ashore in France as a possible diversion. Even in this case, Clausewitz came to the conclusion that the large landing would not be possible without the help of an uprising of the population in the area against its government.(2)

Twentieth century thinkers sought more practical answers to the problems of conducting amphibious operations. They discovered that there were certain "preconditions for success" that were even more important than having a technological lead or advantage in firepower.

"While at first it was believed that amphibious warfare required merely the solution of tactical problems and the construction of special equipment, it soon appeared that landing operations cannot be carried out unless certain strategic conditions have been established previously. Every single feature of land and naval tactics had to be adapted to the particular difficulties of ship-to-shore operations."(3)

Jomini, in his *Summary of the Art of War*, discussed landing operations as part of maritime expeditions. Jomini offers some principles to the commander charged with the conduct of landing operations.(4)

- * Deceive the enemy as to the point of debarkation
- * Choose an anchorage where the landing can be expeditiously executed
- * Vigorously push the attack
- * Land artillery early
- * Seize ground promptly to permit the development of the attack

Jomini was not exposed to mass amphibious landings and developed most of his ideas by a thorough study of historical

examples. These case studies constituted his laboratory for study and investigation. Although never executed, he was surely exposed to the plans for the invasion of England which were brought to the brink of execution, all materiel and men assembled.

More directly however, he was exposed to the effect of amphibious operations as he observed Wellington in the Peninsular Campaign. Backed by the power of the British fleet, Wellington was able to put forces ashore where they could mass against French weaknesses.

Stefan Possony, in his article "Amphibious Strategy", updates some of Jomini's principles based on lessons learned from World War II. In doing so, he defines a set of strategic conditions for amphibious operations.(5)

- * Absolute command of the sea
- * Air mastery
- * Exercise of air mastery
- * Element of surprise
- * Adequate landing material
- * Speed

Amphibious Principles of Mahan

Since Alfred Thayer Mahan is the accepted father of modern naval strategy, it is important to survey his principles for amphibious operations. Professor W.H. Russell has done an excellent job of providing a focused look at Mahan's principles of amphibious operations. It is from his lecture on the amphibious doctrines of Mahan that I base the following analysis.

The casual reader of Mahan may notice that the word

amphibious rarely appears in his works. The more appropriate 19th century term was *maritime expedition*. Mahan understood the role of amphibious operations and its place of importance in the total naval strategy.

"Any complete naval campaign must, of necessity, be amphibious; that is, it must begin on one shore, cross a broad ocean, and conclude on the far shore."(6)

The objective of the far shore was not an absolute goal for amphibious operations, but it does show us the grand scale of operations that Mahan was thinking about. It also establishes an important premise that alludes to his theoretical deduction that naval campaigns inevitably lead to amphibious operations. I think that this has now evolved one step further in that amphibious operations can lead to large AirLand operations. A triphibious campaign consisting of a naval operation, amphibious operation, and major land operation--all under the ubiquitous umbrella of airpower--may be the best way to implement a maritime strategy.(7)

The principles of maritime operations, as derived by Russell in explaining Mahan, can be divided into three broad categories which are further refined as follows:

- * Preliminary Principles
 - Organic
 - Command
 - Offensive
- * Logistical Principles
 - Logistics
 - General supply
 - Mobile Supply Facilities
 - Economy
 - Coordinated Lines
- * Operational Principles
 - Security
 - Objective

Concentricity
Operational

Preliminary Principles

As a means of framing his concepts on naval doctrine, Mahan devised a scenario best described as a trans-Pacific operation. Forces employed for this trans-Pacific campaign were divided into 2 major elements; an assault convoy and an accompanying group of capital ships. This task organization was radically different from the conventionally accepted procedure of simply dividing forces between troops and ships.

Command and control of the forces was to be accomplished by a logically developed command structure. The overall operation was to be led by one commander. Subordinate commands and commanders branched-out below this along functional lines. The assault convoy and capital ships each had their own commanders, and in turn the same was true for their subordinate units. Lind, in his *Maneuver Warfare Handbook*, is in agreement with Mahan when he states:

"What is required. . . is an extremely high degree of command flexibility. Decentralized control of widely dispersed landing points through which small, self-contained MAGTF's must be projected and reinforced requires commanders with a keen appreciation of the tactical art." (8)

Mahan's thoughts on command form the basis for his command principles:

"A single central commander should coordinate the actions of all major elements within an organic amphibious force. When one such major element operates in its own special field, a single special commander should coordinate all action by its component parts." (9)

Mahan also thought that the key to the overall effectiveness of the unit was that all parts had to be organic elements of the

entire force, rather than merely attached subordinates. From this idea on organization comes the organic principle:

"The major elements of an amphibious force should combine to form a single organic unit but with each major unit capable of performing subordinate missions in its own special field. When operating in its own field, each major element should combine its own component parts into a single organic unit." (10)

Simplicity, in the face of what may be the most complex military operation, is quite a challenge but it is also indispensable. By adhering to the principles of unity of command, and conducting continuous coordination, detailed training, and rehearsals, the effects of this complexity can be overcome. (11)

Mahan realized that for an amphibious operation to achieve the greatest effect, it must be offensive in nature. The basis for this was Mahan's conviction that every action taken outside of the nation's boundaries must be offensive in nature even though the overall strategy or object of the war may be defensive. Of course, he realized that every attacker is forced to assume the defensive at some time during operations, but was insistent that the offensive be regained quickly even if some risk had to be taken. From this series of ideas, Russell derived Mahan's principle of the offensive:

"By its very nature an amphibious operation is an offensive effort. If he be thrown temporarily on the defensive, an amphibious commander must resume the offensive the moment he regains sufficient power - even when that last step implies a narrowly calculated risk. In distant or prolonged operations, the theater commander must lift from his amphibious commander any responsibilities that infringe upon his maintaining the offensive." (12)

Logistical Principles

Mahan, in the tradition of Jomini, believed in the

importance of logistics. Although the term *logistics* will rarely be seen in his writings, the 19th Century term *communications* is used and has the same meaning. However, these terms are not to be confused with the concept of *sustainment*, which is but a minor subset of the classical notion of logistics. Mahan's axiom that "logistics dominate war" recognizes that every tactical, operational, and strategic decision is tempered by logistics potential, and that logistics planning is driven by the objective of the operation. In more current thinking, Lind places logistics high on his list of requirements for successful operations.

"No amphibious operation will succeed if it is not supported logistically. . . . the current logistics doctrine of on-call resupply and gradual buildup in a Beachhead Support Area is inadequate. The vulnerability of the beachhead supply base is a particularly serious problem. It is a 'nose' by which the enemy can grab the landing force and compel it to give battle on unfavorable terms."(13)

Mahan was quick to caution against logistics becoming an end unto itself and said that "the foundation. . . must not be [mis]taken for the superstructure for which it exists."(14) The reciprocal relationship and interdependency of operations and logistics is key to the logistic principle:

"Adequate logistics are the indispensable foundation for an amphibious offensive. Just like sound defenses, logistical facilities should aim toward offensive combat and so must never become an end in themselves."(15)

Sustainment, as mentioned earlier, is a major subset of logistics. Under Jomini's influence, Mahan used land warfare analogies to explain the sustainment of offensive operations at sea. By his reasoning, naval ships and fortified bases were to amphibious warfare as an Army's supply trains and depots were to

land based warfare.

The basic ideas of linking the forward assault forces with the rear sustaining base through the use of intermediate bases and interconnecting transportation lays the foundation for the general supply principle:

"The organic amphibious force requires an oversea supply line connecting the assault convoy to the home sea frontier. This line should afford the minimum number of intermediate bases necessary to insure full flow of supplies. Each base requires adequate transport from its rear, as well as the resources, the people, and the equipment necessary for sustaining its full share of the offensive force."(16)

Mahan's idea of the floating base was the critical link in getting supplies ashore to the troops. The beachmaster was recognized as the "pivotal position in the supply line from assembly areas afloat to troops ashore."(17) In much the same manner, Lind writes:

"Amphibious logistics should, instead, be based on forward-push logistics, which provides the commander with the fluid type of support necessary to fight. . . In an amphibious landing, forward-push logistics should center on mobile loaded floating dumps and TACLOG groups with expanded responsibilities. Preloading vehicles with combat essential supplies and similarly organizing logistics and maintenance units would largely erase the immediate need for vulnerable dumps and installations ashore."(18)

Mahan recognized the need for clear lines of authority linking the beachmaster with his superiors on both sides of the shoreline and the need for an adequate means of communication. Recognition of these needs leads to the principle of mobile supply facilities:

"The assault convoy requires mobile, floating base facilities. Efficient flow shoreward requires clear command relationships, numerous functional assault craft and ample channels for signal communications."(19)

Due to the very nature of amphibious warfare, the quantity

of supplies that can be positioned forward or actually landed on the beachhead is limited. Mahan recognized the importance of getting the right quantity of supplies to the right place and people at the right time. Although times, places, and quantities may be subject to debate, the only right people were the troops in contact.

Tied to the idea of getting supplies to the troops in contact was the overriding concern that even the slightest enemy actions directed toward the supply ships off shore could cause them to move away from the beachhead. To this end, it is imperative that everyone ashore, to include combat troops not in contact, be used to clear the beach of supplies.

Orderliness of these offloading operations is equally as important as speed. All supplies coming ashore still had to be converted into "usable combat gear." This not only recognizes a concern for conservation of scarce resources, but that part of "getting the right supplies" implied correct warehousing techniques, inventory procedures, and packaging.

Economy also extended rearward along the lines of support. Large floating supply bases robbed the force of cargo bottoms and were therefore discouraged. Once a secure foothold was established, a base of supply should be built.

The notion of economy is still relevant because there simply is never enough "combat gear" to accomplish the combat mission and never enough transportation assets to accomplish the sustainment mission. Key to the idea of economy is the quick arrival, offloading, and turnaround of all supply ships. From these ideas come Mahan's principle of economy:

"All hands should clear supply dumps till combat intervenes.

Once combat begins ashore, clearing the beachhead supply dumps should fall to a service unit integral with the assault convoy. Rearward of the floating bases, all supply activities should be based ashore as rapidly as possible in order to conserve shipping space." (20)

Mahan was uneasy with the apparent vulnerability of supply ships. Friendly, enemy, and natural events could form the basis of a multitude of hazards. Because the troops ashore were so heavily reliant on these links to the rearward supply bases, protection of these lines of communications was of paramount interest to Mahan. Just as most other systems are afforded a backup, there should be two lines of communication which support the amphibious operation. From this comes the principle of coordinated lines:

"Distant or prolonged amphibious operation requires a double line of supply facilities, well separated but with each arm converging toward the objective." (21)

Operational Principles

Although Mahan was concerned about logistics and the vulnerabilities of supply ships, he realized that these issues were still subordinate to operations within the battle area. Mahan compared warfare on the sea to that on land in an attempt to explain the difficulties in securing amphibious operations.

In land warfare, the offensive campaigner moves forward seizing terrain. Once secured, he must maintain that territory for safe lines of communications or retreat. On the sea, there are fixed bases that are secured as the maneuver progresses. However, the area between these is nothing but ocean without terrain features. Comparing the sea to a desert where forces lie and wait for an opportunity to strike an enemy's rear or flank

posed a unique problem for securing supply lines.

Harkening back to his principle of duality, Mahan reasoned that it was nearly impossible for an enemy raiding party to engage more than one base of supply at a time. Supply bases, which are critical decisive points, must be protected by the amphibious campaigner. In response to this observation, he concluded that among multiple supply bases each base must be responsible for its own security and that the theater commander must provide necessary forces to secure the lines between individual supply bases.

This arrangement relieves the amphibious commander from the responsibility of securing lines of communications and allows him to focus on security of the assault convoy. The heavy combat ships that normally accompany the assault convoys should be formed into security task forces. Thus, the amphibious security task force is responsible for protecting both the assault convoy and reacting to needs along the lines of supply. From this rationale comes the security principles:

"The commander of an organic amphibious force must use his heavy combat vessels as a security task force, and hold it within easy supporting distance of his assault convoy or beachhead. Organic base defenses and mobile defense force, all under the theater commander, must secure bases and oversea transport beyond easy reach of the security task force." (22)

However, Mahan cautioned that "as a rule that one should never attempt to straddle, do two things at the same time unless [he has] more than enough [strength] for each [of them]." (23)

Mahan, a firm believer in centralized control of operations, thought that the central authority should choose the main (focal) objective ashore. Intermediate objectives were left to the

discretion of the theater commander. These should be selected based on their suitability as potential supply bases in support of the operation or based on their potential as positions from which enemy raiders could attack the line of supply.

Once both main and intermediate objectives were chosen, it was commonly accepted that all that remained was for the amphibious commander to proceed along the line as shown. Obviously, this was far from the truth, since the assault commander had to be prepared for unexpected attacks from his front and flanks. To cope with this threat, he had to skillfully position his security task force so that it could support the assault convoy and still seek out enemy ships. Remembering that the main task of combat ships is the *destruction of enemy forces*, Mahan derives his principle of the objective:

"Central authority should establish the focal objective of an organic force. The theater commander should establish tentative intermediate objectives. The assault convoy must move rapidly toward each successive objective. The security task force must remain within easy supporting distance of the assault convoy, but at the same time must seek to destroy enemy craft that threaten the convoy or the landed troops." (24)

Concentration is a common theme that runs throughout all of Mahan's writings. His concept of concentration is:

"the specific method of so distributing our own forces as to be superior to the enemy in one quarter, while in the other you hold him long enough [for] your main attack to reach its full result [be the] necessary time. . . half an hour. . . days, weeks, perhaps more." (25)

Although it appears on the surface that Mahan means concentration as "outmassing" the enemy at a critical point, his meaning goes deeper. Russell notes that,

"Mahan did not confuse the ends (massing) with the means by equating concentration strictly to mass. Instead, he

insisted that massing at the proper time and place is the result of proper military operation, but that one generally achieves mass by means of concentric convergence -- a term which expresses the literal meaning of concentration." (26)

Since the main objective of an amphibious assault is to rapidly build up combat power ashore from zero to a level capable of defeating any enemy reinforcement or counterattack, the principle of "mass" is essential to success. The assault force has to be able to concentrate combat power at the critical place before the enemy does the same. (27)

Clark G. Reynolds, in his article entitled "MacArthur as Maritime Strategist", begins by defining maritime strategy:

"Maritime strategy is not naval strategy. Naval strategy may be defined as the employment of Navy forces to a specific end. Maritime strategy has a much broader scope: the combined use of all arms--Army, Navy, and Air Forces--in seaborne operations." He continues by saying that "Historically it has meant the 'indirect approach' of maritime nations against their continental enemies by first winning command of the sea, destroying the enemy's seaborne commerce, conducting a naval blockade, and making amphibious assaults on outlying enemy territory and colonies--all designed to completely isolate the enemy's homeland, the classic formula proposed by Sir Julian Corbett in 1911." (28)

Likewise, the idea of concentric convergence is exactly what B.H. Liddell Hart meant when he wrote of both the indirect approach and the expanding torrent. Mahan's eleventh principle, directly based on the idea of concentration is the fundamental concentric principle:

"Amphibious success flows from massing (or concentrating) a substantial portion of an organic offensive force against a weaker, but critical, element of the enemy force. One achieves such concentration through dispersed elements of an organic unit that converge concentrically toward the objective, in such a manner that each subordinate component checks its immediate enemy long enough for the main attack to succeed." (29)

The principle of concentric operations was derived from the

Jominian concept of combinations. Jomini said that any theater of operations was like a line, with a center and two flanks. In planning any action, hit one flank rather than the center. The enemy has greater difficulty reinforcing a flank than the center. As to which flank to choose, the one nearest the enemy lines of supply or retreat is the best because if you beat him there he has no hope of successfully continuing operations. This Jominian reasoning, applied to the sea, lays the foundation for Mahan's operational principles:

"All preliminary objectives should focus toward one flank of the enemy's main line of defense; and whenever possible toward the flank that gives easier access to his main line of supply or retreat." (30)

Summary

There appears to be an operational roadway to success based on the previous theoretical discussion of amphibious principles. These fall under three broad categories; preconditions, logistical considerations, and operational considerations. Further refined, these categories can be restated as follows:

Preconditions

- * Units must be formed.
- * There must be a unity of command within the theater of operations which is based on the situation.
- * The aim of the operation must be offensive in nature and must be directed toward defeating an enemy's center of gravity.

Logistical Considerations

- * Adequate logistics are at the foundation of successful amphibious operations.
- * Lines of communications and bases of supply must exist to tie the forward combat elements to the main source of subsistence and insure a full flow of supplies forward.

- * Supplies must be converted into combat gear and pushed forward to the troops in contact.
- * Clear lines of authority and communications must be established both forward and rearward of the beachhead.
- * Whenever possible, the attacker must use multiple lines of communication.
- * Logistical assets must be flexible enough to react to the mobility of operations.

Operational Considerations

- * Security is best served by speed, surprise, and deception.
- * Operations must have a clear objective that seeks to defeat an enemy's center of gravity through the use of decisive points.
- * Initial dispersion, followed by tactical concentration, leading to dispersion in the enemy's operational depth are key to success. This is done in all three dimensions.
- * Whenever possible, decisive points must be attacked indirectly or from the flank nearest to an enemy's lines of communication.
- * The attack must integrate air, sea, and land forces and synchronize their activities throughout the area of operations.
- * Airpower and seapower superiority must be maintained, at least at points of friendly concentration.

III. Evolution of Joint Amphibious Doctrine and Procedures

During the interwar years, the Marine Corps was the motive force in developing doctrine and techniques for amphibious operations. From 1920 to 1935, the Navy and Marine Corps struggled with distilling the principles of amphibious operations. Lessons learned from the operations at Gallipoli, the Ouel Islands, and Mesopotamia provided practical examples for study.

An early landing exercise was conducted in 1922 at Culebra

Island. A participant of this exercise recalls that

"One of the pieces to be landed from a battleship was a 155mm gun. Upon arrival, one group of men built a platform across two 50-foot motor launches to take the gun ashore. Another group went ashore and started building a dock to receive it."(1)

The operation took nearly three days. The Marines then recognized the need for improved and specialized equipment, but had no clear picture of exactly what was needed. Subsequent years were filled with experimentation, improvisation, and the development of joint doctrine.

"By 1933, a joint Army-Navy board had produced several manuals that prescribed methods to ensure Army and Navy cooperation in joint overseas operations. In 1938, the Navy published its Fleet Training Publication 167 which became the basic joint tactical document for conducting operations during World War II."(2)

Between 1935 and 1940, seven Fleet Landing Exercises were held to test the newly emerging doctrine and procedures. All of these exercises were conducted in the Caribbean, with the exception of one which was held off the coast of California. Even the largest of these exercises involved no more than 3000 personnel. The Army participated in the exercises between 1935 and 1939. In 1935 and 1936 the Army furnished officer observers and in the following 2 years, 2 Army divisions (the 3rd and 1st) participated in these exercises.

These exercises provided a test-bed for new ideas and techniques. Due to the constraints of these exercises, the concept and employment of naval gunfire and low-level strafing of the beach in support of landing operations were not fully developed or appreciated.

The doctrine that was born from these exercises prescribed

six major operations that must be part of any amphibious operation. These were: (3)

- * Command Relationships
- * Naval Gunfire Support
- * Aerial Support
- * Ship-to-Shore Movement
- * Securing the Beachhead
- * Logistics

These basic principles evolved into "essentials of amphibious technique" which laid the foundations of the following operational concepts:

"The Fleet Marine Force as a balanced expeditionary component of ground troops and as much an element of the fleet as its submarines or aircraft carriers, ready for overseas operations and trained for an amphibious assault." (4)

"Doctrines for naval gunfire support and close air support during landing operations--the first practical means ever worked out to permit the attacker, even in amphibious assault, to gain without artillery the fire superiority needed to overbalance the inherent advantages of the defender." (5)

"Logistic and communications doctrines and troops for the peculiar purpose of bridging wind and water between ship and shore." (6)

"Specially organized base-defense units designed to possess very high strategic mobility for the rapid occupation and defense development of overseas bases so that the other elements of the Fleet Marine Force need not be dispersed or immobilized in defensive roles." (7)

The Army played a minor role in the development of amphibious doctrine. To keep abreast of the emerging concepts, Army Chief of Staff Major General Malin Craig requested increased participation of Army units in amphibious training exercises.

In response to this request Admiral William J. Leahy, then

Chief of Naval Operations, replied as follows:

"I consider joint operations are of the major type and therefore do not belong in the early phases of the war. The first or opening phase it is believed will be purely naval in character involving the seizure of temporary bases in the immediate theater of fleet operations. It is essential that the naval forces perfect the doctrines and techniques of such operations." (8)

By its own decree, the Navy assumed total responsibility for the development of amphibious doctrine, procedures, and equipment. Their vision was unilateral and the landing forces envisioned were those of the Marine Corps. Some of the innovations included the design and testing of small landing craft, techniques of loading cargo for combat, naval gun support for landing forces, ship-to-shore communications, and control of operations in approach to the beach. (9) All of these developments were made with the basic assumption that only Marine forces would conduct amphibious operations. The problem with these assumptions, when applied to Army units, was that the organizational size and logistical base differed quite appreciably between the Army and the Marines.

"When war broke out in Europe in 1939, the training of amphibious forces in the United States was accelerated because there was little doubt that amphibious operations would have to be conducted by US military forces if the country ever entered the war. From the beginning, though, the military services found it difficult to reconcile the Navy view--that the assault troops, especially if landed at night, should be lightly equipped and sparsely supplied, leaving the big stuff to follow later--with the Army's desire to get as much as possible ashore in the assault boat waves." (10)

In 1940 amphibious training centers were established on the east and west coasts. These two centers were designed to accommodate one Army division and one Marine division apiece. Training was under the control of the Navy. The Army interest in

the venture died and with it so did the project. (11) Possony gives a good account of the overall pre-war views on amphibious operations.

"Prior to the outbreak of the present war [World War II], it was believed that modern armaments would make large scale amphibious warfare even more difficult than it had been in the past. It was assumed that air forces of only medium strength plus minefields, submarines, small naval weapons, obstructions, coastal artillery and torpedo tubes could prevent even the strongest fleet from approaching the coast. By these defensive means the troop transports could be destroyed practically at will. The master of the sea, however great his naval strength, could not under the circumstances extend his command to the enemy's coastal waters." (12)

These were the prevailing thoughts of the time. For this reason, nobody really expected to see amphibious operations on the gigantic scale as were seen during the second world war.

"Essentially the problem of amphibious warfare boils down to the question whether landing forces could be provided with firepower superior to that of the defender and whether landing formations could be protected during their ship-to-shore and initial shore movements" (13)

Although the Navy was the proponent for amphibious operations, her capability to act across multiple theaters stretched command and control assets to their limits. When the United States entered the war in December 1941, the Navy found itself devoting more and more of its time, resources, and energies to the expanding naval war in the Pacific. Army planners continued to assume that the Navy would take the lead in amphibious training. This changed in 1942 when Admiral King, who was in England helping plan the European invasion, said

"that for an operation as large as the contemplated invasion it would be impossible for the Navy to operate all of the landing craft and simultaneously maintain commitments in other theaters. It became clear that the Army had to train amphibious units that could operate landing craft" (14)

Since the Navy did not have what it needed to support the Army's amphibious operations in the European theater, the Army was given permission to establish an amphibious training center. The chief of engineers was given the mission of preparing Army units to conduct amphibious operations. The Engineer Amphibious Command was established to oversee that training.

"Initially, the Army's interest laid in the formation of boat operating regiments and boat maintenance battalions. But it soon realized, even before the boat units could be organized, that it would also need special engineer units to prepare the far shores and to unload the the heavy equipment that would be needed on those shores to support the landing troops." (15)

In response to this need, the Army shifted its organization to an engineer brigade. Six of these engineer amphibious brigades were created that incorporated all of these elements; boat engineers, shore engineers, a boat maintenance battalion, and miscellaneous special troop units. (16)

From June 1942 to June 1943, the Army and Navy each conducted amphibious training according to their separate doctrine. By March 1943, the situation had become so complicated that the Joint Chiefs of Staff issued a directive placing all amphibious training under the Navy. Existing Army amphibious special engineer brigades were exempted from this requirement. JCS directive 598, 28 December 1943, formalized these instructions and required henceforth that all amphibious training of Army units be conducted by the Navy. (17)

Mastery of the sea permitted US forces to outmaneuver and encircle Japanese troops and also prevented enemy troops from mutually supporting each other. To illustrate the situation, let me quote from Possony's article that appeared in the *Marine Corps*

Gazette:

"Visualize an army of five divisions drawn up for battle. As if by magic, the army is completely immobilized; it can neither advance, nor retreat, nor move sideways. A single division attacking from the flank can never be opposed by more than one battalion which it will annihilate, only to proceed to the annihilation of the next battalion. In the end, one division would have annihilated five enemy divisions, without even suffering a great loss. This is, schematically put, the situation that prevails in Pacific archipelagoes. Such are the advantages of amphibious warfare carried out in a completely commanded sea."(18)

Possony also recognized the synergistic effect caused by the use of combined arms and services, *true jointness*:

"It is effective teamwork and close tactical cooperation between surface, subsurface, air and auxiliary arms of the Navy, and between the floating navy and the marines, the army, airborne troops, and air forces that have enabled our forces to break through coastal fortifications, to overcome, by frontal assault or maneuver, the resistance of the strongest fortresses to be found anywhere in the world, and carry out a permanent amphibious offensive on a front of several thousand miles."(19)

It is difficult to compare amphibious operations in the different theaters of operation between 1942 and 1945 since critical variables such as tide, surf, enemy opposition and obstacles varied greatly between theaters.(20)

After enjoying great successes, the Army closed the door on amphibious operations at the end of the war. Garland notes that,

"Despite the fact that a sizable number of people in the Army in the years immediately following World War II agreed with MacArthur's estimate of the value of the engineer special brigades, the Army let them die shortly after the war ended. Then in 1948, when the Marine Corps was given official blessing as the sole developer of amphibious doctrine, the Army turned its back on the subject and walked away from it."(21)

By June 1948, only one amphibious unit remained in the Army's force structure. The 2d Engineer Special Brigade participated in amphibious operations with the 2d Infantry

Division in California in 1946. Preparatory training for this exercise was conducted at the Naval Amphibious Training Center in Coronado.

In October 1949, General of the Army Omar N. Bradley said that "I predict that large scale amphibious operations will never occur again." This pronouncement was well in line with the thinking of the times and was regarded by many as the obituary for the Marine Corps, since amphibious operations were their livelihood.

Meanwhile, events on the Korean peninsula were about to change everyone's views on amphibious warfare. General MacArthur, in response to the failing situation in September 1950 on the Korean peninsula, announced his operational intent as:

"[The] operation planned mid-September is [an] amphibious landing of a two-division corps in rear of the enemy lines for [the] purpose of enveloping and destroying enemy forces in conjunction with [an] attack from the south by Eighth Army. I am firmly convinced early and strong effort behind his front will sever his main lines of communication and enable us to deliver a decisive and crushing blow. . ." (22)

From this operational vision was born Operation CHROMITE, a two pronged offensive consisting of both an assault from the sea at Inchon and an assault on land from Pusan. This dramatic transition from the defense to the offense that allowed MacArthur's forces to wrest the initiative from the enemy and defeat the North Koreans in what would later be called the "first Korean War." The tactics and techniques were tried and tested during the Pacific campaigns of the previous war. The success at Inchon breathed eternal life into the Marines and revitalized thinking on amphibious warfare.

Since Korea, the Army has not shown much interest in

amphibious warfare. Even during the Korean War, the Army was content to go along with whatever amphibious doctrine was available. (23) Now, the Army has indicated that its primary commitment to any joint amphibious operation would be its sole airborne division and a few supporting units. (24)

Many years have passed since that decision was made and the world situation has continued to change. In light of my introduction and discussion of the evolution of joint amphibious operations, it is worthy to note that:

"The Army can no longer afford to keep its back turned to the subject of amphibious warfare. . .it may well be called on to carry out large-scale amphibious operations because Marine units, while effective and hard-hitting, have as their specific purpose the seizure of advanced bases for the Navy. The Marine organization is not predicated on the doctrine of fighting a prolonged battle. To succeed, Marine operations have to be short and decisive." (25)

Today's doctrine for large scale joint amphibious operations is virtually unchanged from that employed at Inchon. With the exception of technological improvements in ship-to-shore communications and small scale tactical movement there has not been any significant changes in this area of warfare. However, with the general disinterest that has surrounded amphibious operations outside of the naval sphere of influence, this technique has become both highly specialized and generally a single service responsibility.

IV. PRACTICAL APPLICATIONS -- INSIGHTS FROM HISTORY

Introduction

Military theory is useless unless it can be linked to reality. History provides us with a laboratory within which we can examine this relationship. More importantly, while examining

this relationship it is very easy to extrapolate out to the future. While this is not an absolutely accurate method of predicting the future of warfare, it can provide you with an educated look at what is to come.

In this section, I will look at some historical examples involving large scale joint amphibious operations in light of the theoretical framework developed in the second section of this paper: preconditions, logistical considerations, and operational considerations. By this examination, I hope to validate my previously stated theoretical conclusions in anticipation of evaluating both current and future doctrines and operations. I realize that these examples only begin to approach the scope and complexity that we can expect in future operations of this nature. It is also important at this point to begin assessing the impact of changing means with respect to technology and force structure.

Operation DOWNFALL

The final campaign to defeat Japan, Operation DOWNFALL, was to achieve "unconditional surrender of Japan by seizure of vital objectives in the Japanese Archipelago." (1) The Army and General Marshall insisted that this be conducted in the same manner as Normandy. The Navy had different ideas. In the spirit of Corbett, the Navy proposed that Japan be "strangled into submission by air-sea blockade." (2)

DOWNFALL was split into two successive major operations, OLYMPIC and CORONET. OLYMPIC had as its objective to advance land based forces into Southern Kyushu in order to support the second operation. CORONET's objective was to strike a decisive

blow to enemy forces in the vicinity of Tokyo.

"The concept of the OLYMPIC operation visualizes entry into southern Kyushu by major joint overseas landing operations after intensive air preparation. Preparatory air operations include assaults by Carrier Task Groups and prolonged action by land-based elements operating in force from Ryukyus and Marianas. Initial assaults seize and develop the Kagoshima Wan and Ariaki Wan ports of entry. The area is occupied as far north as the general line Tsuno-Sendai to block mountain defiles and prevent hostile interference with our operations." (3)

This operation was estimated to require approximately fourteen to seventeen divisions and associated support troops.

"The concept of the CORONET operation visualizes a major joint assault supported by the massed air and naval power in the Pacific, to destroy hostile forces and seize the Tokyo-Yokohama area. . . Initial operations establish local air support and drive into the Kanto Plain from outlying beaches, while the defenses of the approaches to the Tokyo Wan and Northern Sagami Bay are reduced by intensive naval and air action. Forces built up by subsequent landings, and operations are continued to the occupation of the Tokyo-Yokohama Area and the Kanto Plain." (4)

This operation was expected to require twenty-five divisions. The Pacific Fleet was tasked to conduct the amphibious phases of the operation, support the ground action after landing, and maintain air and naval superiority. The Twentieth Air Force was initially given a strategic mission. This was to be shifted to a tactical mission as the operation progressed inland. Diversionary operations were to be conducted by the Commanding General, China Theater.

MacArthur, in hopes that Russia would join the war in the Pacific, outlined the following strategy:

". . . we should secure the commitment of the Russians to active and vigorous prosecution of the campaign against the Japanese in Manchuria of such proportions as to pin down a very large part of the Japanese Army; that once this campaign was engaged we should then launch an attack on the home islands, giving, as he expressed it, the *coup de main* from the rear while substantial portions of the military

power of Japan were engaged on the mainland of Asia. . . He said he felt that our strength should be reserved for use in the Japanese mainland, on the plain of Tokyo, and that this could not be done without the assurance that the Japanese would be heavily engaged by the Russians in Manchuria." (5)

MacArthur was emphatic that we should wait for Russia to become involved in the war. With this, he could blockade Japan with naval and air forces, while Russia waged a major campaign on the continent. Meanwhile, MacArthur with his maritime expeditionary forces could strike, "landing in the enemy's homeland to administer the *coup de grace* from the rear." (6) The 5th Fleet would provide the assault ships and close support to the operation. Due to the successes of the Naval-Marine assault team and their close air support techniques, MacArthur "insisted upon Naval control of all close air support which would include 16 escort carriers, four with Marine groups." (7)

In his comments on "MacArthur as a Maritime Strategist", Stanley Falk, then Chief Historian at the Office of Air Force History, says that MacArthur failed to fully appreciate the logistical aspects of naval operations, especially the mobile supply base concept. In explaining the importance of lines of communication and bases of supply, Falk says that this

"second decisive element of Central Pacific Warfare--that great self-contained conglomeration of support, supply, and service vessels that kept the fleet at sea for long periods--provided 'seven-league' boots for the far-flung carrier and amphibious operations." (8)

Operation CHROMITE

The main objective, in the early days of the Korean conflict, was to eject the North Korean Army and regain lost territory on the Korean peninsula. As a way to this end, MacArthur designed an operation that involved landing forces to

the rear of the North Korean Army at Inchon. From this point, his aim was to push on to retake Seoul and destroy the North Korean Army in South Korea. In much the same manner as DOWNFALL, he envisioned the Eighth Army in Pusan to engage the enemy from the front while the Army's X Corps and the First Marine Division maneuvered on the enemy's rear, cutting his lines of communication and retreat. This concept runs almost directly parallel to the logic of Operation DOWNFALL. In many ways, CHROMITE is merely a scaled down version of DOWNFALL.

Operation CHROMITE, conducted in mid-September, sent the North Koreans back across the 38th parallel. The implications of this success were far-reaching. In his article on amphibious operations, Brigadier General Edwin H. Simmons says that:

"In 1950. . . there was once again skepticism of the viability of large-scale amphibious assault. Cross-grained to this conservative thinking was MacArthur's intuitive genius. Inchon literally 'turned' the war. The North Korean force that had squeezed the United Nations Command into the Pusan Perimeter, had to face about to confront a new enemy, proved incapable of doing so, and collapsed." (9)

The concept of operation CHROMITE is different from that of NEPTUNE, the amphibious portion of OVERLORD. Many sources note that OVERLORD was driven heavily by logistical concerns and terrain objectives. The seizure of ports and logistical buildup ashore were more important than the destruction of German Army Group B. In CHROMITE, the opposite was true. MacArthur focused totally on the destruction of the enemy. The operation may have been limited by logistics potential and totally based on the same, but its main effort was always focused on cutting off the mass of the enemy's army from its base of supply.

Summary

It is evident to me that there is a clear link between the theoretical concepts for triphibious operations as derived in the summary of the second section of this paper and the historical examples provided in the section just concluded. In the case of both DOWNFALL and CHROMITE, all of the theoretical preconditions were met. Organic units, under the structure of a corps, were used in these operations. Offensive action was directed toward defeating the enemy's center of gravity--the mass of his armed forces. Enemy lines of communication were determined to be decisive points. Attacking these to threaten and at the same time avoid direct confrontation with the enemy's center of gravity is a clear example of the indirect approach. Even within this indirect approach, there was another indirect approach.

The decisive point was attacked from the flank which was most vulnerable--the sea flank. Maximum disruption was achieved with a minimum expenditure of combat power. In the case of CHROMITE, this decisive maneuver threatened the enemy's center of gravity and set the conditions for North Korea's defeat. Had it not been for the intervention of the Chinese Army, the Korean conflict may have ended shortly after Inchon.

Of the operational considerations, I have already discussed the indirect approach, objective, center of gravity, and decisive points. Perhaps it is appropriate to focus on the concept of synchronization and Liddell Hart's idea of the "expanding torrent".

The key to the success of both CHROMITE and DOWNFALL was synchronization. This success was not achieved by merely

coordinating the actions of all services throughout two widely separated corps toward a common objective. Rather, it was a time-conscious coordination of the effects of combat power throughout the theater of operations that set the conditions for the decisive defeat of the enemy.

Clearly defined command relationships facilitated this interaction. The synergistic effect of combined arms and joint service operations allowed the right amount of combat power to be concentrated at the decisive place and time.

The whole idea of dispersed elements concentrating at a decisive point in both space and time, and then again dispersing in the enemy's operational depth is evolved from Liddell Hart's concept of the "expanding torrent." The climactic transition from the defense to the offense--wresting the initiative--occurs at the point of tactical concentration. From the enemy's perspective, operational dispersion and concentration denies him any opportunity for seizing the initiative.

In both of these operations, logistical considerations were not allowed to overshadow operational considerations. It was recognized that logistics provided the potential for offensive action and operational maneuver. Friendly lines of communications linking forward forces with rearward bases, adequate combat gear, and operational flexibility coalesced to transform capability into actuality. It can be argued that MacArthur did not have an appreciation for the magnitude of logistical effort in the World War II Pacific Theater. Regardless of his aptitude for the technical aspects of logistics and sustainment, he must have understood his logistical potential. No matter how grandiose the

operational scheme, logistics potential was aptly converted to combat power.

V. CONCLUSIONS AND RECOMMENDATIONS

Looking at capabilities today, in light of operations DOWNFALL and CHROMITE, it seems clear to me that there are three major shortfalls in our current ability to conduct large scale joint amphibious operations. First, there is a lack of joint amphibious operational concepts and doctrine. Second, there is a severe lack of amphibious shipping capability at the tactical, operational, and strategic levels. Third and finally, both of these inadequacies result in a force structure that is not fully prepared for the mission.

Operational Concepts and Doctrine

A fundamental precondition for any operational concept is a recognition of its utility. I think, in light of my research, that triphibious campaigning has a role in future warfare. To distinguish this concept from the tactical concept of amphibious operations, "triphibious" should be added to our joint lexicon. The effects of this are twofold. First, it will certainly spark a debate that will cause military planners and thinkers to "raise their sights" out of the tactical to the operational level. Second, it will cause this same group of professionals to ponder the non-nuclear conventional possibilities presented by this type of large scale joint operation.

In my introduction, I listed the elements of a triphibious operation. From these phases, I have derived an operational concept for triphibious operations.

Triphibious operations are conducted by an all service joint

task force within a theater of operations that encompasses an area which starts at some point over the horizon and concludes at some point far inland, well within the enemy's operational rear. The aim is to synchronize operations and for forces to strike the enemy simultaneously along multiple lines of operation at the beachhead, on his deep flanks, and in his operational rear. The operation continues with the link-up of deployed forces and the introduction of heavy combat forces as required to exploit success.

There is currently no doctrine that fully implements the triphibious concept.

Amphibious Shipping

Operational and tactical mobility are at the crux of both the problem and solution. Solutions to these problems may lie in items of new equipment such as the air cushioned landing craft (LCAC), the tilt-rotor Osprey (MV-22), the light armored vehicle (LAV), and large surface effect fast sealift ships (SFS). These systems require only the simplest port/landing facilities, while still providing adequate legs to and from a base of support that is somewhere over-the-horizon. Although some visionaries may argue that strategic and tactical airlift assets are sufficient, they fail to recognize that the requirements for landing strips and airport facilities decrease flexibility and increase vulnerability, especially in immature or undeveloped theaters. The Marine Corps seems to have solved the amphibious movement challenge with a variety of systems and with maritime prepositioned ships. However, with the exception of heliborne and airborne methods, the Army has no readily available means to deliver men and equipment to a hostile shore, or from a semi-secured shore forward through a lodgment area.

In an article entitled, "War Roles of Merchant Ships", Christopher Dawson reviews the renewed interest in the military

use of merchant ships. He is quick to point out that the revitalized interest is based on a surplus of merchant tonnage. This surplus capacity is available for hire or sale--both options are more economical than building new ships.

However, the use of merchant vessels for amphibious operations is highly suspect. Maritime vessels with the requisite dimensions and strength required for amphibious operations are hardly to be found in the civilian fleet. Roll-on/Roll-off (RO/RO) ships do have a useful role if there is an adequate port facility.(1)

In his article entitled, "An Amphibious Landing? With Civilian Ships?", Colonel John F. Brosnan examines the suitability of civilian shipping in support of amphibious operations. He concludes that there are neither enough nor are the ones available suitable for the needs of an amphibious force.

Force Structure

I feel that the current combat force structure throughout the services can adequately conduct triphibious operations. The Army's light forces can make up for any shortfall in airmobile or airborne capabilities. Motorized forces, although being removed from the Army's force structure, may have the proper mix of mobility, sustainability, and firepower. Ideally, these should be rapidly deployable, hard hitting, and self sustaining forces.

The most serious shortfalls lie in the combat support and combat service support structure since they are responsible for many of the critical tasks unique to triphibious campaigning. Combat service support in joint operations is a service responsibility. In an operational concept whose strength lies in

the synergistic effects of joint combat operations, we must look seriously at joint logistics capability and operations.

Without the items of equipment previously mentioned, the engineer tasks in support of triphibious operations increase. The support units that proved critical to the Army's amphibious successes in World War II and Korea are non-existent. The Army's Engineer Amphibious Brigades, whose purpose was to prepare beachheads and port facilities and to provide the critical link between the sea and the land, are no longer in the Army's force structure. A lack of equipment and adequately structured supporting forces make amphibious operations and triphibious campaigning impossible for the Army.

Summary

As I return to my original research questions that asked whether or not we had the capability to move large ground forces over water barriers to gain, retain, or re-establish a foothold on other continents and if there were well-founded operational procedures in place for the conduct of large scale joint amphibious operations, I must answer "no" to both.

How do we get to the operational level? We get there by raising our sights, acknowledging the requirement, and continuing to pursue joint initiatives in combat, combat support, and combat service support doctrines. Although theoretically possible, neither an adequate doctrine nor sufficient technological means are available for the successful prosecution of a triphibious campaign. What this may mean in the future is that the United States may not be able to project adequate ground combat power as a part of a national strategy.

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